

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/658, 355c
Source: IFC016
Date Processed by STIC: 11/15/2006

ENTERED



IFW16

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/658,355C

DATE: 11/15/2006
TIME: 11:44:02

Input Set : F:\923SEQ.004.txt
Output Set: N:\CRF4\11152006\J658355C.raw

3 <110> APPLICANT: Gantier, Rene
 4 Guyon, Thierry
 5 Hugo, Cruz Ramos
 6 Vega, Manuel
 7 Drittanti, Lila
 9 <120> TITLE OF INVENTION: Rational Directed Protein Evolution Using Two Dimensional
 10 Rational Mutagenesis Scanning
 12 <130> FILE REFERENCE: 17019-013001/923
 14 <140> CURRENT APPLICATION NUMBER: US/10/658,355C
 15 <141> CURRENT FILING DATE: 2003-09-08
 17 <150> PRIOR APPLICATION NUMBER: 60/457,063
 18 <151> PRIOR FILING DATE: 2003-03-21
 20 <150> PRIOR APPLICATION NUMBER: 60/410,258
 21 <151> PRIOR FILING DATE: 2002-09-09
 23 <160> NUMBER OF SEQ ID NOS: 502
 24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 26 <210> SEQ ID NO: 1
 27 <211> LENGTH: 165
 28 <212> TYPE: PRT
 29 <213> ORGANISM: Homo sapiens
 31 <400> SEQUENCE: 1
 32 Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met
 33 1 5 10 15
 35 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
 36 20 25 30
 38 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
 39 35 40 45
 41 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
 42 50 55 60
 44 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
 45 65 70 75 80
 47 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
 48 85 90 95
 50 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
 51 100 105 110
 53 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
 54 115 120 125
 56 Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
 57 130 135 140
 59 Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
 60 145 150 155 160
 61 Leu Arg Ser Lys Glu
 62 165

CPG-67

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Input Set : F:\923SEQ.004.txt
 Output Set: N:\CRF4\11152006\J658355C.raw

64 <210> SEQ ID NO: 2
 65 <211> LENGTH: 165
 66 <212> TYPE: PRT
 67 <213> ORGANISM: Artificial Sequence
 69 <220> FEATURE:
 70 <223> OTHER INFORMATION: D2A Mutant INF-alpha 2b
 72 <400> SEQUENCE: 2
 73 Cys Ala Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met
 74 1 5 10 15
 76 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
 77 20 25 30
 79 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
 80 35 40 45
 82 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
 83 50 55 60
 85 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
 86 65 70 75 80
 88 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
 89 85 90 95
 91 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
 92 100 105 110
 94 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
 95 115 120 125
 97 Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
 98 130 135 140
 100 Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
 101 145 150 155 160
 102 Leu Arg Ser Lys Glu
 103 165
 105 <210> SEQ ID NO: 3
 106 <211> LENGTH: 165
 107 <212> TYPE: PRT
 108 <213> ORGANISM: Artificial Sequence
 110 <220> FEATURE:
 111 <223> OTHER INFORMATION: P4A Mutant INF-alpha 2b
 113 <400> SEQUENCE: 3
 114 Cys Asp Leu Ala Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met
 115 1 5 10 15
 117 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
 118 20 25 30
 120 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
 121 35 40 45
 123 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
 124 50 55 60
 126 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
 127 65 70 75 80
 129 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
 130 85 90 95
 132 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys

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Input Set : F:\923SEQ.004.txt
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133 100 105 110
 135 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
 136 115 120 125
 138 Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
 139 130 135 140
 141 Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
 142 145 150 155 160
 143 Leu Arg Ser Lys Glu
 144 165
 146 <210> SEQ ID NO: 4
 147 <211> LENGTH: 165
 148 <212> TYPE: PRT
 149 <213> ORGANISM: Artificial Sequence
 151 <220> FEATURE:
 152 <223> OTHER INFORMATION: Q5A Mutant INF-alpha 2b
 154 <400> SEQUENCE: 4
 155 Cys Asp Leu Pro Ala Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met
 156 1 5 10 15
 158 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
 159 20 25 30
 161 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
 162 35 40 45
 164 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
 165 50 55 60
 167 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
 168 65 70 75 80
 170 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
 171 85 90 95
 173 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
 174 100 105 110
 176 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
 177 115 120 125
 179 Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
 180 130 135 140
 182 Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
 183 145 150 155 160
 184 Leu Arg Ser Lys Glu
 185 165
 187 <210> SEQ ID NO: 5
 188 <211> LENGTH: 165
 189 <212> TYPE: PRT
 190 <213> ORGANISM: Artificial Sequence
 192 <220> FEATURE:
 193 <223> OTHER INFORMATION: T6A Mutant INF-alpha 2b
 195 <400> SEQUENCE: 5
 196 Cys Asp Leu Pro Gln Ala His Ser Leu Gly Ser Arg Arg Thr Leu Met
 197 1 5 10 15
 199 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
 200 20 25 30

RAW SEQUENCE LISTING
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Input Set : F:\923SEQ.004.txt
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202 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
203 35 40 45
205 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
206 50 55 60
208 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
209 65 70 75 80
211 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
212 85 90 95
214 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
215 100 105 110
217 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
218 115 120 125
220 Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
221 130 135 140
223 Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
224 145 150 155 160
225 Leu Arg Ser Lys Glu
226 165
228 <210> SEQ ID NO: 6
229 <211> LENGTH: 165
230 <212> TYPE: PRT
231 <213> ORGANISM: Artificial Sequence
233 <220> FEATURE:
234 <223> OTHER INFORMATION: H7A Mutant INF-alpha 2b
236 <400> SEQUENCE: 6
237 Cys Asp Leu Pro Gln Thr Ala Ser Leu Gly Ser Arg Arg Thr Leu Met
238 1 5 10 15
240 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
241 20 25 30
243 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
244 35 40 45
246 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
247 50 55 60
249 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
250 65 70 75 80
252 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
253 85 90 95
255 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
256 100 105 110
258 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
259 115 120 125
261 Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
262 130 135 140
264 Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
265 145 150 155 160
266 Leu Arg Ser Lys Glu
267 165
269 <210> SEQ ID NO: 7
270 <211> LENGTH: 165

RAW SEQUENCE LISTING DATE: 11/15/2006
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Input Set : F:\923SEQ.004.txt
 Output Set: N:\CRF4\11152006\J658355C.raw

271 <212> TYPE: PRT
 272 <213> ORGANISM: Artificial Sequence
 274 <220> FEATURE:
 275 <223> OTHER INFORMATION: S8A Mutant INF-alpha 2b
 277 <400> SEQUENCE: 7
 278 Cys Asp Leu Pro Gln Thr His Ala Leu Gly Ser Arg Arg Thr Leu Met
 279 1 5 10 15
 281 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
 282 20 25 30
 284 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
 285 35 40 45
 287 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
 288 50 55 60
 290 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
 291 65 70 75 80
 293 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
 294 85 90 95
 296 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
 297 100 105 110
 299 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
 300 115 120 125
 302 Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
 303 130 135 140
 305 Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
 306 145 150 155 160
 307 Leu Arg Ser Lys Glu
 308 165
 310 <210> SEQ ID NO: 8
 311 <211> LENGTH: 165
 312 <212> TYPE: PRT
 313 <213> ORGANISM: Artificial Sequence
 315 <220> FEATURE:
 316 <223> OTHER INFORMATION: L9A Mutant INF-alpha 2b
 318 <400> SEQUENCE: 8
 319 Cys Asp Leu Pro Gln Thr His Ser Ala Gly Ser Arg Arg Thr Leu Met
 320 1 5 10 15
 322 Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
 323 20 25 30
 325 Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
 326 35 40 45
 328 Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
 329 50 55 60
 331 Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
 332 65 70 75 80
 334 Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
 335 85 90 95
 337 Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
 338 100 105 110
 340 Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/15/2006
PATENT APPLICATION: US/10/658,355C TIME: 11:44:03

Input Set : F:\923SEQ.004.txt
Output Set: N:\CRF4\11152006\J658355C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:195; N Pos. 1,22

VERIFICATION SUMMARY

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DATE: 11/15/2006

TIME: 11:44:03

Input Set : F:\923SEQ.004.txt

Output Set: N:\CRF4\11152006\J658355C.raw

L:7601 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:195 after pos.:0